

ABSTRACT OF THE DISCLOSURE

A nanowire, nanosphere, metallized nanosphere, and methods for their fabrication are outlined. The method of fabricating nanowires includes fabricating the nanowire under thermal and non-catalytic conditions. The nanowires can at least be fabricated from metals, metal oxides, metalloids, and metalloid oxides. In addition, the method of fabricating nanospheres includes fabricating nanospheres that are substantially monodisperse. Further, the nanospheres are fabricated under thermal and non-catalytic conditions. Like the nanowires, the nanospheres can at least be fabricated from metals, metal oxides, metalloids, and metalloid oxides. In addition, the nanospheres can be metallized to form metallized nanospheres that are capable as acting as a catalyst.